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National Aeronautics and
Space Administration

February 20, 1996
NRA 96-OSS-03

RESEARCH ANNOUNCEMENT

SPACE PHYSICS
NEW MISSION CONCEPTS
PROGRAM

CONTIN

Notice of Intent to Propose Due:
Proposal Submission Deadline:

April 1, 1996
May 20, 1996

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**SPACE PHYSICS NEW MISSION CONCEPTS
PROGRAM**

**NASA Research Announcement
Soliciting Proposals for Basic Research
Submitted on or Before
May 20, 1996**

NRA 96-OSS-03

Release Date: February 20, 1996

Notice of Intent to Propose Due: April 1, 1996

Proposal Submission Deadline: May 20, 1996

**Office of Space Science
National Aeronautics and Space Administration
Washington, DC 20546-0001**

SPACE PHYSICS NEW MISSION CONCEPTS PROGRAM

This NASA Research Announcement (NRA) solicits proposals for concept studies for future U.S. flight missions in space physics whose subdisciplines are cosmic and heliospheric physics; solar physics; magnetospheric physics; and ionospheric, thermospheric, and mesospheric physics. Grants of up to about \$100K per year for up to two years will be provided to support studies of innovative missions that NASA might sponsor that promise breakthrough advances in one or more of these subdisciplines. Especially desirable are mission concepts that focus on interdisciplinary objectives for integrated research in space physics. Since low cost is a particularly important factor for the successful initiation of new space science programs, proposals for mission concepts that utilize hardware systems and/or management approaches promising minimal cost are especially encouraged. Also encouraged are concepts that promote the development and/or use of new technologies to achieve miniaturization, cost reduction, and/or light-weighting compared to the current state of the art. Although this NRA is mainly intended to support primarily the development of mission concepts for long-duration orbiting or deep space missions, programs based on suborbital capabilities (sounding rockets and balloons) will also be considered if their science is particularly compelling and/or they show promise as pathfinders for future U.S. space missions. In any case, this NRA will not support study of mission concepts that are under active study or development by another space agency, nor for several special sets of objectives for which formal programmatic activity by NASA is already underway (see Appendix A for further information).

The objectives of the NASA program in space physics are to study (i) the Sun as a typical dwarf star and as the principal source of the time-varying electromagnetic energy and magnetized plasma that forms the heliosphere; (ii) the interaction of these varying solar radiations with the Earth and other planets to form and drive magnetospheric, ionospheric, thermospheric, and mesospheric phenomena; (iii) the entire heliosphere and its interaction with the galaxy; and (iv) the origin and propagation of cosmic rays and neutral matter that enter our solar system from the cosmos. These subdisciplines are collectively represented by the Sun-Earth-Heliosphere Connections theme in the Office of Space Science.

The purpose of this NRA is to invite proposals for concept studies for new missions in one or more of these disciplines that promise major scientific advances and whose required technologies could be sufficiently developed to allow consideration for new start authorization between 1999 and about 2005. Such concept studies should result in the definition of the scientific objectives and the technical requirements for specific missions over a range of program sizes and complexities in one of four cost categories (development cost for spacecraft and payload, as estimated in 1996 dollars, exclusive of launch vehicle):

- low cost missions up to \$20M that may either be orbiting (launched by the Space Shuttle or by an expendable launch vehicle as a secondary or primary payload), or suborbital (utilizing sounding rockets or stratospheric balloons, including long-duration balloons around the Earth's polar caps);
- small orbital missions costing up to \$70M that may qualify either as Small Explorers (SMEX) \leq \$35M or as Medium-class Explorers (MIDEX) \$36-70M;
- intermediate class missions in the range \$71-150M; and
- large missions not to exceed \$250M.

Participation in the new mission concepts program is open to all categories of organizations, including educational institutions and other nonprofit organizations, profit making corporations, NASA Centers, and other Government agencies. Since U.S. Government policy seeks to maximize opportunities for Small Disadvantaged Businesses, Historically Black Colleges and Universities, and Minority Institutions, investigators from such institutions are especially encouraged to propose.

In all cases selection for funding of concept studies will be based on the proposal's science and technical merit as determined by peer review, relevance to the NASA program in space physics, and cost of the study. Funding for selected proposals will derive from NASA's budget for Fiscal Year (FY) 1996 that began October 1, 1995. Approximately \$1M for each of FY's 1996 and 1997 is expected to be available for this program, which will be used to support a mix of one and two year studies costing up to about \$100K each per year. However, the Government's obligation to make awards under this NRA is contingent upon receipt of proposals that the Government determines are acceptable for award and the availability of funds.

Proposers selected for this program must provide a final, complete report of their findings. Since NASA may use these reports to advocate future program activities, it is understood that all final reports derived through this program will be in the public domain. NASA makes no promise that missions so studied will ever be approved for funding and, even if they are approved, that any of the original selectees to this NRA will be granted special priority for selection as investigators for those programs (including suborbital).

Appendix A provides supplemental information specific to this NRA, as well as amendments to Appendix B which contains NASA standard guidance for the preparation and the evaluation of proposals. Appendix C provides model formats for summary information that must accompany each proposal. All appendices may be obtained through any of the following methods:

- by written request (facsimile, postal mail, or e-mail) to the point of contact for additional information listed below;
- by returning the order form enclosed as part of this mailing; or
- by downloading from the Space Physics WWW homepage at
<http://umbra.nascom.nasa.gov/spd/>

The following summary information applies to this NRA:

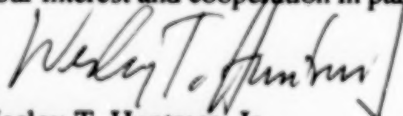
- Program announcement identifier: NRA 96-OSS-03
- Date of issue: February 20, 1996
- Due date for Notice of Intent to propose: April 1, 1996
- Date for submission of proposal: May 20, 1996; 4:30pm EST.
- Anticipated announcement of selections: August 1996
- Required number of proposal copies: 10 copies plus signed original.

- Address for submission of both the Notice of Intent and the proposal by U.S. Postal Service, private courier, or commercial mail: NASA Space Physics New Mission Concepts Program
Jorge Scientific Corporation
Suite 700
400 Virginia Avenue, SW
Washington, DC 20024 USA.

[Contact for commercial mail delivery:
Ms. Susan Borden
(202) 554-2775]

[For NOI submissions only:
Facsimile - (202) 554-2970
E-mail - hlancast@leda.hq.nasa.gov]
- Selecting official: Director, Space Physics Division
Office of Space Science
NASA Headquarters
- Contact for additional information: Mr. Richard J. Howard
Code SS
NASA Headquarters
Washington, DC 20546-0001
Phone - (202) 358-0898
Facsimile - (202) 358-3987
E-mail - rhoward@hq.nasa.gov

Your interest and cooperation in participating in this effort are solicited and appreciated.


Wesley T. Huntress, Jr.
Associate Administrator for
Space Science

NASA Research Announcement (NRA)/Announcement of Opportunity (AO) Mailing List Update

If your current address is NOT up-to-date, please fill out this form completely.

This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.

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Please check which announcements you would like to receive:

Must check one, please include code number from mailing label:

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- ☐ 2. Announcements of Opportunity (specific space flight mission)

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| <input type="checkbox"/> 3. Foreign Addressee | <input type="checkbox"/> 6. Nonprofit Corporation | <input type="checkbox"/> 9. Small Business |

Societies:

- ☐ A. American Astronomical Society ☐ B. American Geophysical Union ☐ C. Others _____

Discipline:

(check only those that apply)

(MUST CHECK AT LEAST ONE)

1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling
- ☐ B. Instrumentation (Technology Dev)
- ☐ C. Laboratory Astrophysics
- ☐ D. Data Analysis (Archival)
- ☐ E. Observational Programs

2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy
- ☐ B. Planetary Materials and Geochemistry
- ☐ C. Planetary Geology and Geophysics
- ☐ D. Instrument Development
- ☐ E. Origins of Solar Systems
- ☐ F. Exobiology

3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics
- ☐ B. Solar Physics
- ☐ C. Magnetospheric Physics
- ☐ D. Iono-Thermo-Mesospheric Physics

4. Information Systems/Computer Science

- ☐ A. High Performance Computing and Networking
- ☐ B. Scientific Data Analysis and Visualization
- ☐ C. Science Data Storage and Management
- ☐ D. Software Technology

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END

10-18-96